

## CLAIMS

1. Sample-holder for measuring parameters of porous objects, this sample-holder (1) comprising a draw measurement cell, characterized in that it comprises a hyperfrequency cavity (C) for humidity measurement integrated within the cell so as to surround the object present in said cell over at least part of its height, to enable measurement of humidity before and/or after draw measurement.

2. Sample-holder as in claim 1, intended to measure parameters of a cigarette comprising a tobacco rod (2) wrapped in cigarette paper (3) and a filter, characterized in that it comprises a tubular body comprising:

- an access orifice provided with an iris diaphragm (19) enabling separation of the top of the tobacco rod (2) from the atmosphere so as to channel the flow of paper ventilation for its measurement using first suitable flow measuring means ( $D_2$ ),
- a cavity (C) surrounding the tobacco rod (2) over at least a fraction of its height so as to allow determination of the humidity content of the tobacco through the analysis of hyperfrequency signals, and
- at least a first sphincter (31) to hold the cigarette in place by encapsulating the filter end (4), so as to perform draw measurements using aspiration means (ASP) associated with said sphincter (31) and second means for measuring pressure ( $\Delta P$ ),
- the distance between the iris diaphragm (19) and the lower end of the sphincter (31) being slightly shorter than the length of a cigarette.

3. Sample-holder as in claim 2, characterized in that it comprises a second sphincter (28) enabling encapsulation of the filter (4) opposite the first sphincter (31) with respect to a

ventilation zone (5) of the filter (4) so as to channel the ventilation flow (QF) of the filter (4) for its measurement.

4. Sample-holder as in any of the preceding claims,  
 5 characterized in that it comprises a processor (MP) able to control an operative sequence successively comprising measurements of:

- humidity before draw,
- standardized draw (TN),
- filter ventilation (VF),
- 10 - paper ventilation (VP),
- draw with filter ventilation closed (TFE),
- humidity after draw.

5. Sample-holder as in claim 4,  
 15 characterized in that it comprises, firstly, a cylindrical structure made of three tubular parts assembled onto one another, namely:

- a first part comprising a hopper (14) whose central coaxial cavity comprises a part of flattened cone shape (17) followed by a cylindrical part (18) whose diameter is substantially that of the cigarette,  
 20 the lower part of this hopper (14) comprising an iris diaphragm (19),
  - a second part consisting of a hyperfrequency cavity (C), this part comprising a cylindrical casing whose two circular walls (23, 24) comprise two coaxial circular orifices into which the two respective ends of a tube (25) in dielectric material fit with gas-tight assembly, the inner diameter of  
 25 this tube being slightly larger than the cigarette diameter,
  - a third part comprising a cylindrical central passage with several bore levels carrying a first sphincter (28) intended to encapsulate the cigarette at the upper end of the filter (4), and a second sphincter (31) intended to encapsulate the lower end of the filter (4).
- 30 and secondly,

- aspiration means (ASP) connected downstream of the second sphincter (31), these aspiration means (ASP) comprising means for measuring the flow ( $D_1$ ) of aspirated air (QT),

- a first air flow duct (13) leading into a chamber located in the space between the first and second part, to channel and measure the paper ventilation flow rate (QP),

- a second air flow duct (30) leading into a chamber (29) located in the space between the two sphincters (28, 31), to channel and measure the filter ventilation flow rate (QF).